

The listing of claims will replace all prior versions, and listing, of claims in the application:

LISTING OF CLAIMS

Claim 1. (Currently Amended) A projectile launch assembly comprising:

a launch tube having distal and proximal ends and an inwardly extending structure therebetween, the proximal end being adapted to receive a muzzle of a firearm;

a receiver disposed on the distal end of the launch tube, said receiver having connector structure at a distal end thereof for connection to a projectile;

an energy absorbing plug disposed in said launch tube and having a proximal end portion adjacent the dimple; and

an energy transfer piston disposed in said launch tube and adjacent said plug and having a proximal end configured complementarily to said plug and having a distal end configured complementarily to a proximal end of said receiver;

wherein a bullet fired from the firearm muzzle is absorbed by said plug which is thereby moved with said piston distally in said tube; and

wherein said piston engages said receiver to propel the assembly and the projectile from the firearm muzzle; and

wherein the proximal end of said receiver is provided with a recess therein and the distal end of said piston is configured complementarily to the recess.

Claim 2. (Canceled)

Claim 3. (Currently Amended) The assembly in accordance with claim 2 1 wherein the receiver proximal and recess is of a frusto-conical configuration.

Claim 4. (Original) The assembly in accordance with claim 1 wherein said launch tube is a cylindrically shaped elongated tube.

Claim 5. (Original) The assembly in accordance with claim 4 wherein the dimple structure extends radially inwardly from a wall of said launch tube, to form an annularly-shaped dimple structure arrangement.

Claim 6. (Original) The assembly in accordance with claim 1 and further comprising a collar mounted on the distal end of the launch tube, said collar being connectable to said receiver to thereby fix said receiver on said launch tube.

Claim 7. (Original) The assembly in accordance with claim 6 wherein said receiver is releasably fixed to said collar.

Claim 8. (Original) The assembly in accordance with claim 7 wherein said receiver is threadedly fixed to said collar.

Claim 9. (Original) The assembly in accordance with claim 3 wherein the plug body portion comprises a frusto-conically shaped portion extending toward said receiver from the plug proximal end portion.

Claim 10. (Original) The assembly in accordance with claim 9 wherein a distal end of the plug body portion is provided with an enlarged end portion extending outwardly beyond a small end of the frusto-conically shaped plug body portion, and said piston is provided with a cavity in which the plug enlarged end portion is disposed, such that the plug enlarged end portion and the piston cavity effect interconnection of said plug and said piston.

Claim 11. (Original) The assembly in accordance with claim 8 wherein said receiver is threadedly removable from said collar to open the distal end of said launch tube, said piston and said plug are removable from the launch tube open distal end, and said piston is removable from said plug.

Claim 12. (Original) The assembly in accordance with claim 10 wherein said plug is of at least one material selected from a group of materials consisting of a polymer, lead, aluminum, copper, brass, and composites and alloys thereof, and said piston is of steel, and said plug is removable from said piston and replaceable by a second plug of the same configuration.

Claim 13. (Original) The assembly in accordance with claim 1 wherein said receiver connector structure comprises a threaded axial recess in the distal end of said receiver.

Claim 14. (Original) The assembly in accordance with claim 13 wherein said threaded axial recess is adapted to receive a threaded shaft of a grappling hook.

Claim 15. (Original) The assembly in accordance with claim 1 wherein the proximal end of said launch tube is adapted to receive a muzzle comprising a barrel and a flash suppresser.

Claim 16. (Original) The assembly in accordance with claim 1 and further comprising stabilization fins fixed to said launch tube and extending outwardly therefrom.

Claim 17. (Currently Amended) The assembly in accordance with claim 2 1 wherein the receiver proximal end recess is of a curved configuration.

Claim 18. (Original) The assembly in accordance with claim 8 and further comprising a sealing ring disposed between opposed edges of said collar and said receiver.

Claim 19. (Original) The assembly in accordance with claim 18 and further comprising at least one sealing ring mounted in an annular groove in said piston and engaged with an inside surface of said launch tube.

Claim 20. (Original) The assembly in accordance with claim 1 wherein said energy absorbing plug is fixed to said energy transfer piston by releasable screws.

Claim 21. (Original) The assembly in accordance with claim 1 and further comprising a bulkhead fixed in said launch tube proximate the dimple structure, said launch tube being provided with a central aperture adjacent the proximal end of said plug.

Claim 22. (Original) The assembly in accordance with claim 21 and further comprising a washer fixed to said plug and moveable therewith to create an expanding chamber between said washer and said bulkhead upon operation of the assembly.

Claim 23. (Currently Amended) A method for launching a projectile, the method comprising the steps of:

providing a projectile launch assembly comprising:

a launch tube having distal and proximal ends and an inwardly extending dimple therebetween;

a receiver disposed on the distal end of the launch tube, the receiver having connector structure at a distal end thereof for connection to a projectile;

an energy absorbing plug having a proximal end portion adjacent the dimple and a body portion extending distally; and

an energy transfer piston adjacent the plug and having a proximal end configured complementarily to the plug and having a distal end configured complementarily to a proximal end of the receiver;

manipulating the receiver connector structure to connect a selected projectile to the receiver;

sliding the launch tube onto a muzzle portion of a firearm until a distal end of the muzzle portion engages the dimple; and
firing the firearm;

wherein a bullet leaving the firearm muzzle is absorbed by the plug which is thereby moved with the piston distally in the tube; and
wherein the piston engages the receiver to propel the launch assembly and the projectile from the firearm muzzle; and
wherein the receiver connector structure comprises a threaded axial recess in the distal end of the receiver; and
the step of connecting the projectile to the receiver comprises threadedly engaging a threaded shaft of the selected projectile with the threaded axial recess of the receiver.

Claim 24. (Canceled)

Claim 25. (Currently Amended) The method in accordance with claim 24 23 wherein the selected projectile comprises a grappling hook having the threaded shaft.

Claim 26. (Original) The method in accordance with claim 23 wherein the step of sliding the launch tube onto a muzzle portion of a firearm comprises sliding the launch tube onto a barrel and flash suppressor of a rifle until the dimple engages the flash suppressor.

Claim 27. (Original) The method in accordance with claim 23 wherein the launch assembly further comprises a collar mounted on the distal end of the launch tube, and the method for launching a projectile further comprises the step of connecting the collar to the receiver whereby to fix the receiver on the launch tube.